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(54) Cardboard tray.

(57) A cardboard box of the type used in transport of fruit and the like, with a strip body wherein a central sector (1) is defined forming the bottom (1) of said box framed by fold lines into sectors corresponding to the side (3) and double end walls (7,8), with an adjacent (7) and an outer half (8) linked by a double fold line (9) so that the outer half folds over the inside face of the adjacent half; Each end wall also has lateral extensions (11,12) each of which forms an outer and an adjacent linked by extensions of the same folding line (9) connecting the two halves of the end wall as such.

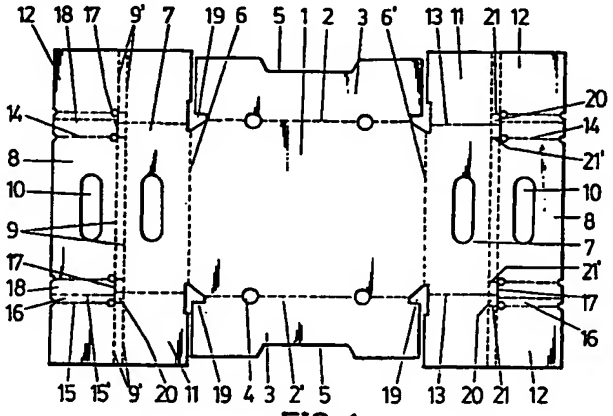

FIG.-1

EP 0 588 751 A1

PURPOSE OF THE INVENTION

This invention refers to a cardboard box of the type used for example in fruit transport and, more specifically, the type structured on the basis of a single strip body scored to form a block-shaped rectangular container open at the top.

The aim of the invention is to attain a box which is structurally simple, easy to assemble, and very resistant to the type of stacking for which such boxes are normally used.

DESCRIPTION OF THE INVENTION

To do this, and in more specific form, on the single strip body of the cardboard box put forward, there is a central sector, forming the base, which extends around its perimeter across fold lines, in the standard fashion, into the two walls or longer sides of the box, and the two ends or shorter sides, which are double so that the end half folds over the inside of the adjacent half, but with the particular feature that each said end has lateral extensions on its two halves in each of which, in turn, two sectors are defined which are inter-related by the double fold line also between the two halves of said end itself.

In addition, the adjacent sector of each extension of each said end is connected to the adjacent half of said end by a fold line corresponding with the vertical edge of the box, while the end sector is connected to that corresponding end half of the wall by three fold lines, one of which is substantially displaced toward the centre of the end in relation to the previous one, while the other two are displaced outward. The section of the double fold line referred to above between said end fold lines and, specifically, those furthest displaced outwards, takes the form of a cut line establishing a special arrangement for the area defined between them to create a type of prismatic column, as will be seen in full detail below.

According to this special structure, the two sectors of each lateral extension of each end are designed to frame the inside and outside of the associated end area of the side so that a triple wall is formed in said zone which, with the double wall of the end, creates maximum structural rigidity, while the columns formed in association with the vertical corners of the box enable the boxes to be stacked, also ensuring their complete lateral stability.

DESCRIPTION OF THE DRAWINGS

To complete the description being given, and in order to aid in an enhanced understanding of the features of the invention, these Specifications are accompanied by a set of drawings, forming an integral part hereof which, by way of illustration and without limitation, represent the following:

Figure 1 is a face view of a cardboard box made according to this invention.

Figure 2 is a partial perspective view of the same box, partly assembled.

Figure 3 finally shows a partial perspective view similar to the previous one but with the box fully assembled.

A PREFERENTIAL EMBODIMENT OF THE INVENTION

In the light of these figures and, more specifically, of figure 1, it is seen how the cardboard box proposed in the invention is structured on the basis of a single one-piece strip body on which a central sector (1) is formed, which is the bottom of the box, fundamentally rectangular, and delimited by fold lines (2-2') linking said bottom (1) to the sides (3): said fold lines (2), have circular ventilation holes (4) between bottom (1) and sides (3), while said sides have, on their free edge and at the middle level, the classical recess (5) cut to aid in this airing or ventilation of the interior of the box.

Along two further fold lines (6-6') the central sector (1) extends into its double ends (7) with an initial or adjacent area in correspondence with said reference (7) and an end (8) related to the former by a double fold line (9) so that it can fold over on to the inside face of the latter: the two halves of each end have openings (10) which are aligned when folded, to form the handles for the box.

Each end (7-8) has outer or lateral extensions which in turn define two sectors (11) and (12) corresponding to halves (7) and (8) referred to above, linked together by prolongations (9') of the double fold line (9): the inside or adjacent sector (11) is associated with the half (7) of the corresponding end along a single fold line (13) coinciding with the corresponding vertical corner of the box as a unit once assembled. The end sector (12) is connected to the associated external or outer half (8) of the wall along three fold lines: one is an internal fold line (14) substantially displaced inward in relation to the fold line (13) of the adjacent or internal half, while the two other fold lines (15-15') form a small crease (16). Moreover, the external trace of the double line (9-9') referred to above linking fold lines (14) and (15) becomes a cutting line (17) which, as seen from figures 2 and 3, makes it possible, with the wing between said lines (14) and (15), to form a diagonal wall as part of a prismatic column to reinforce the vertical corners of the box.

As complement to the structure described in association with each of the corners of the bottom

(1) of the box, there is a space (19) which, in the practical design selected, takes a triangular form, but which might equally be quadrangular or rectangular, intended to receive an angular flange (20) at the level of the cut line (17) referred to above, with the assistance of two further short transversal cut lines (21-21') between the double fold line (9-9') as extension of the pre-cut lines (14) and (16) which, for their part, define the area (18) of the furthest half of the ends.

According to this structure, as already pointed out and as seen from figures 2 and 3, the outer half (8) of the end can fold on to its internal half (7), at the same time as folding the outer sector (12) of the side extensions of the end walls on to their adjacent sector (11), while said extensions fold at right angles along fold line (13) and obtusely along fold line (14) with the parallel conformation of the crease (16), framing the sectors (11) and (12) of the extensions of the end walls to the corresponding outer part of the side walls (3), to which they are secured preferably with adhesive, although this may also be done by stapling: thanks to the crease (16), the area (18) forms a diagonal wall which helps to create a triangular reinforcement column for the box, ending at the bottom in the opening (19) in to which, when the boxes are stacked, the angular flange (20) can fit which is formed in the opening of the box immediately below and which, as is seen particularly in figure 3, projects substantially above the general plane of the opening of the box.

It is not felt necessary to further extend this description in order for any expert in the field to grasp the scope of the invention and the advantages arising from it.

The materials, shape, size and arrangement of the elements may be varied, provided that this does not involve an alteration to the essential nature of the invention.

The terms of these Specifications are to be broadly interpreted at all times, whithout limitation.

Claims

1. A cardboard box of the type used in transport of fruit and the like, structured on the basis of a strip body in which a central sector is defined forming the bottom of said box framed by fold lines into sectors corresponding to the side and end walls: the end walls are double, with an adjacent and an outer half linked by a double fold line so that the outer half folds over the inside face of the adjacent half. Essentially, each end wall also has lateral extensions each of which in turn forms two sectors, one outer and the other adjacent, linked by extensions of the same folding line which connects the two halves of the end wall as such. The adjacent sector of each lateral extension is linked to the corresponding half of the end wall by a single fold line coinciding with the vertical corner of the box, while the outer sector is linked to the corresponding half of the end wall by three fold lines, one of which is substantially displaced inward in relation to the single fold line of the adjacent sector of said extension, and the other two fold lines are significantly close together, outside said fold line of the adjacent sector, and designed to form a crease which enables a significantly diagonal arrangement of the larger area defined between these fold lines in the assembly of the box, to which end the external branch of the double fold line between the adjacent and outer halves of the end wall become a cut line in the sector between the two extreme fold lines of said outer half of the end wall. When folded, the two sectors of each extension fold over on one another and fold at right angles to the end wall as such, framing the outer zone of the associated end wall.

2. A cardboard box as set forth in the previous claim wherein, corresponding to each of the vertical corners of the body of the box, an upward protruding angled flange is defined from the opening thereof, limited at the top by the cut line between the two extreme fold lines of the outer half of the end wall and by two small cut lines extending from said fold lines, running between the double lengthwise fold line. Said angular flanges are designed to fit into openings or spaces in line with the corners of the bottom of the box, when the boxes are stacked.

3. A cardboard box as set forth in previous claims, wherein ventilation openings are incorporated in association with the fold line between the bottom and the sides and, in each of the two halves of each end wall, there are openings which, when the box is assembled, are aligned to form its handles.

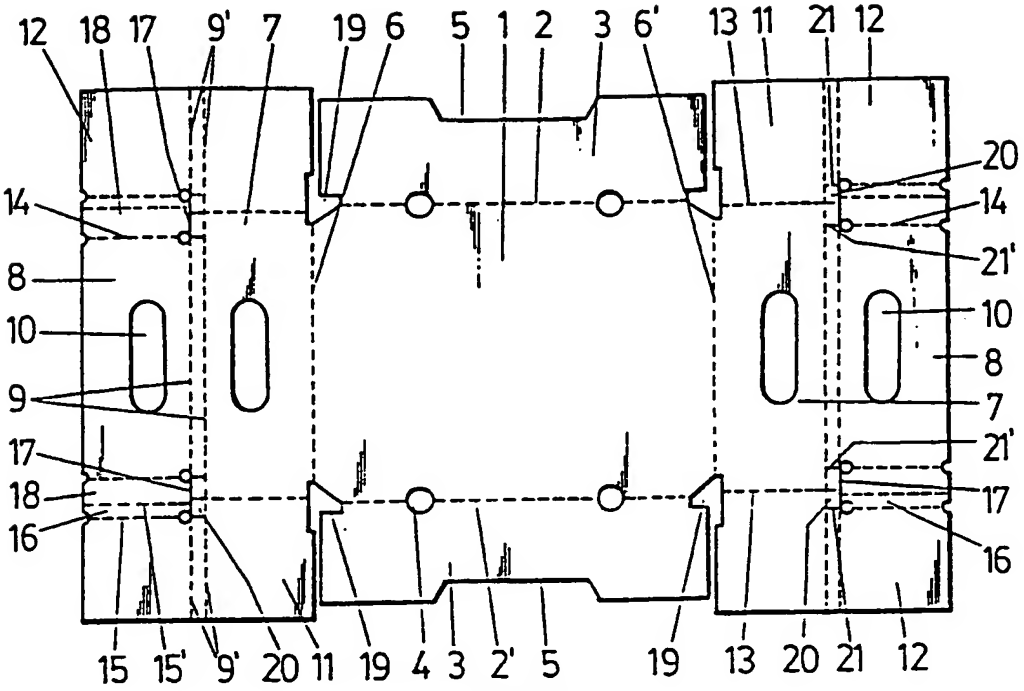

FIG.-1

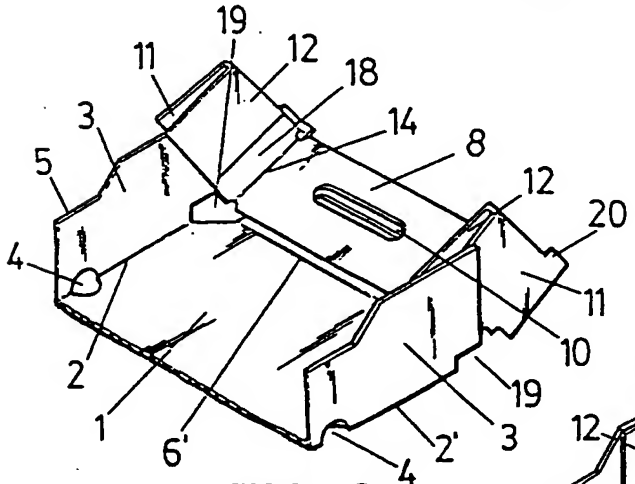

FIG.-2

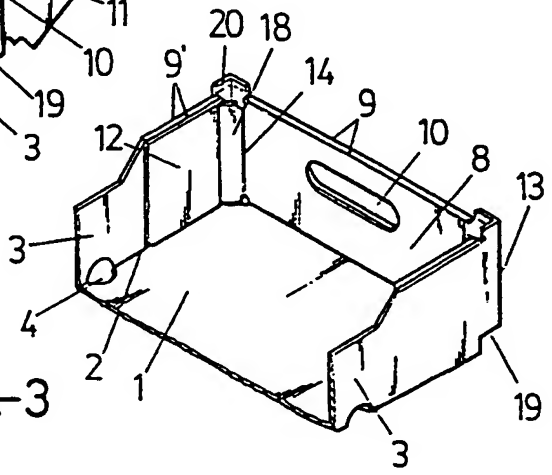

FIG.-3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 93 50 0123

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X Y	US-A-5 125 568 (W. BAUER) * the whole document * ---	1,2 3	B65D5/00
Y	FR-A-2 076 518 (ET. MOREL-BARNERON S.A.) * page 2, line 14 - line 29; figure 1 * ---	3	
A	GB-A-1 540 389 (ASHTON CONTAINERS LTD) * the whole document * ---	1-3	
A	FR-A-2 164 565 (CARTON. GELRIA N.V.) * the whole document * ---	1-3	
A	NL-A-8 601 550 (KARTONFABRIEK SPARREBOOM) * figures 1,2 * -----	1-3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5) B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16 December 1993	Pernice, C

CATEGORY OF CITED DOCUMENTS

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